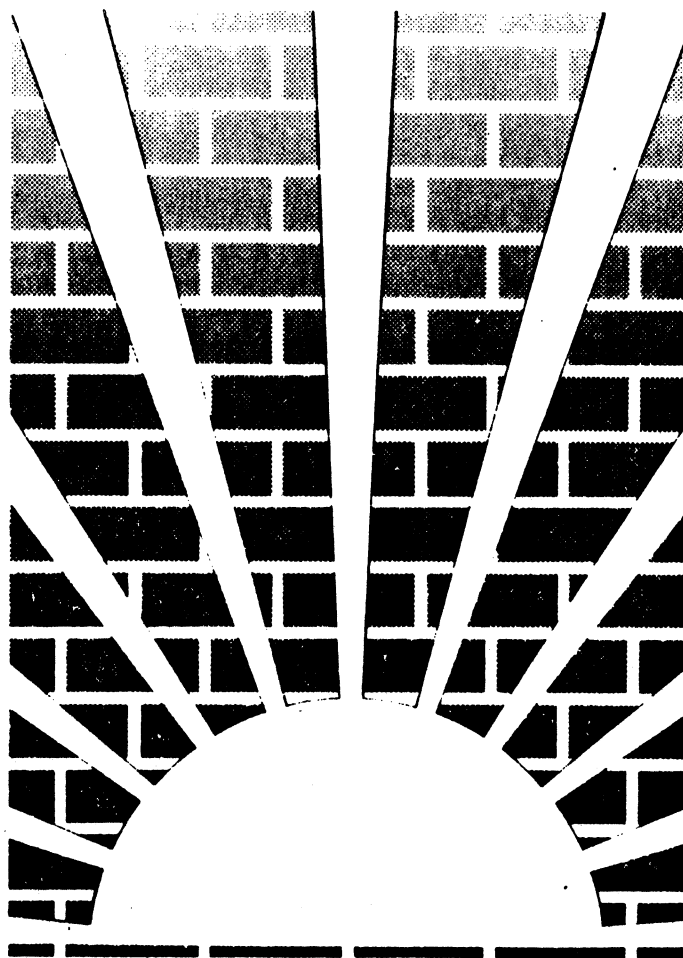




THE BUILDING ENERGY MONITOR



APPROVED FOR PUBLIC RELEASE

**DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
200 STOVALL STREET
ALEXANDRIA, VIRGINIA 22332**

THE BUILDING ENERGY MONITOR HANDBOOK

This handbook is designed to help you do your job as a Building Energy Monitor. It is yours to keep.

Prepared Under the Direction of the
Director, Energy and Utilities Division,
Naval Facilities Engineering Command

Approved for public release -
Distribution Unlimited

August 1982

Why It's Important to Save Energy -- The Navy runs on energy. Ships, aircraft, trucks all require it. We get that energy by burning fuel, much of which is oil; and oil is expensive. Every dollar spent for fuel means a dollar less for spare parts and training. Energy wasted is money down the drain; but energy saved is money saved! And the money saved just might buy another hour's flying time for a Navy airplane!

Your Job -- Energy conservation can start right in your building. Look at it this way . . . Everyone in your building uses some form of energy every day. So, if everyone saves even a little, and everyone in every other building tries just as hard as you do, the Navy will surely save a lot! Doing this will take team effort. You're the team leader.

How do you get this teamwork underway? You begin by becoming energy conscious yourself. As a "monitor," you watch over the energy-using equipment in your building. Your conservation awareness will become a personal habit. Then, with your encouragement, your fellow workers will pick up that habit, and soon energy saving will become second nature to everybody.

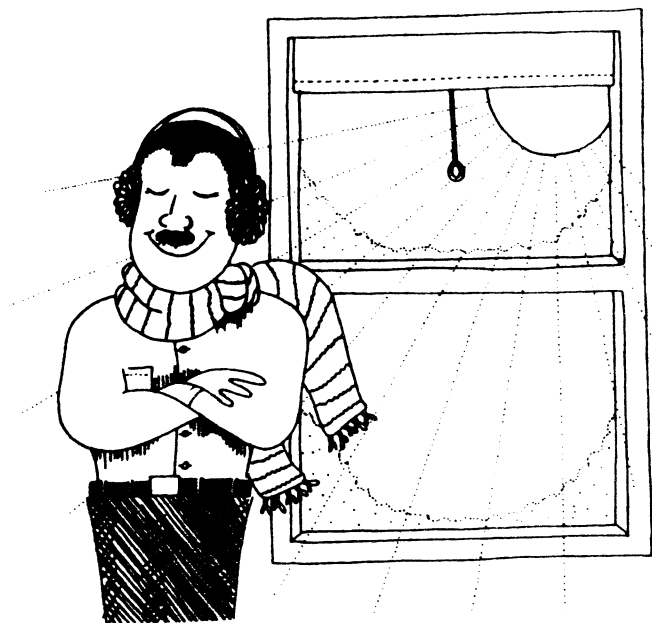
The Energy Users -- There are four sorts of energy-using equipment in your building which you must monitor: the heating system, the cooling system, the lighting system and the hot water system. Early in the job, go through your building to locate and list the energy users of these sorts.

Monitoring -- Inspect, report and suggest -- these are the things you do. Using your own check list like the sample in this handbook, regularly inspect the energy users in the building. See that controls and equipment are set and operating as they should. Make sure your people are closing what should be closed, opening what should be open, and turning off what should be off.

Where your people are working to save heat, cooling, light or hot water, pat them on the back. You're the team leader, not the "sheriff." People like to know their efforts are appreciated.

When you see equipment which needs fixing because it's wasting energy, report it. Call the Emergency Service Desk right away. (On your base, the public works repair office may be called something else. Whatever it is, keep the name and phone number handy!)

Watch for new ways to save energy, and pass the suggestions along. Keep an eye out for ways to reduce your building's over-all energy needs. For example, could you consolidate into one room functions now using energy in two? Use the Navy's regular Beneficial Suggestion System to share such ideas. If yours is a top-notch energy-saving idea, it might win you some cash!



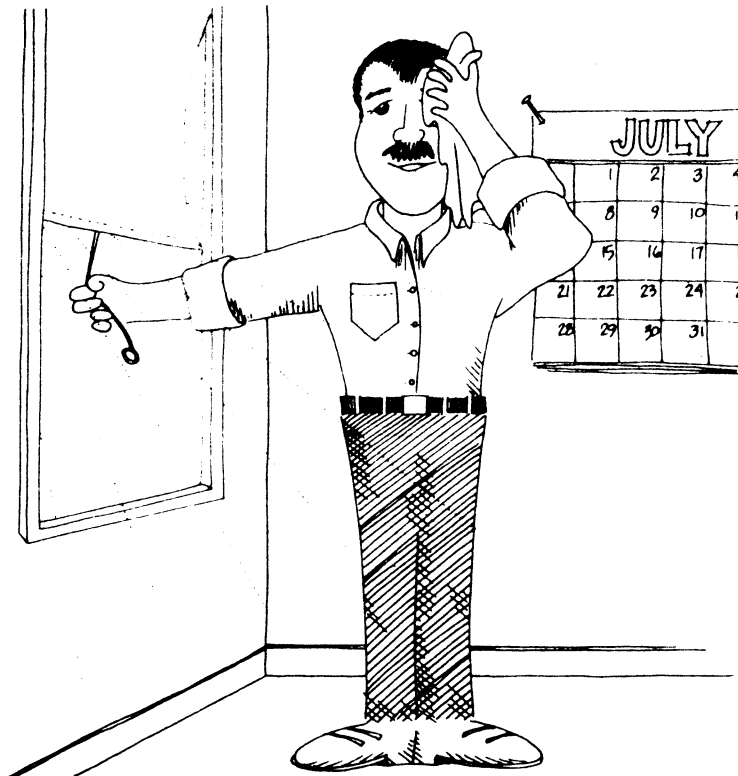
Conserving Heat -- The base has published a heating schedule for every building. It tells you what heat is needed for each work area in your building.

Check regularly to see that thermostats are set as scheduled. Be sure they are lowered to keep temperatures at 65 during work hours and no more than 55 at other times. The heat can be lowered even more where people come and go but don't stay long enough to get uncomfortable. In such non-work areas as storerooms, the heat can be off entirely, except where needed to keep pipes from freezing.

There are other small but helpful ways to save heat . . . See that windows are tightly shut. See that window shades and curtains are closed if the sun's not shining in. And urge people to wear warm clothing.

Finally, watch for energy-wasting cracks, gaps and breaks at door jambs, thresholds and windows. Wherever cold air can "whistle in," extra heat is wasted warming up that cold air. Report such leaks so that they can be caulked or repaired.

Saving Energy Used for Cooling -- Check cooling much the way you do heating, but sort of in reverse. Be sure thermostats and air conditioner controls are set to keep temperatures at 78. They are to be shut off at night and on weekends when no one's working.



To keep from wasting energy cooling hot air needlessly, check to be sure:

- + doors and windows are closed tightly;
- + shades and blinds are closed on the sunny side of the building;
- + lights not in use are off (because they add heat to the area); and
- + ventilation systems are shut down when it's hotter outside than in.

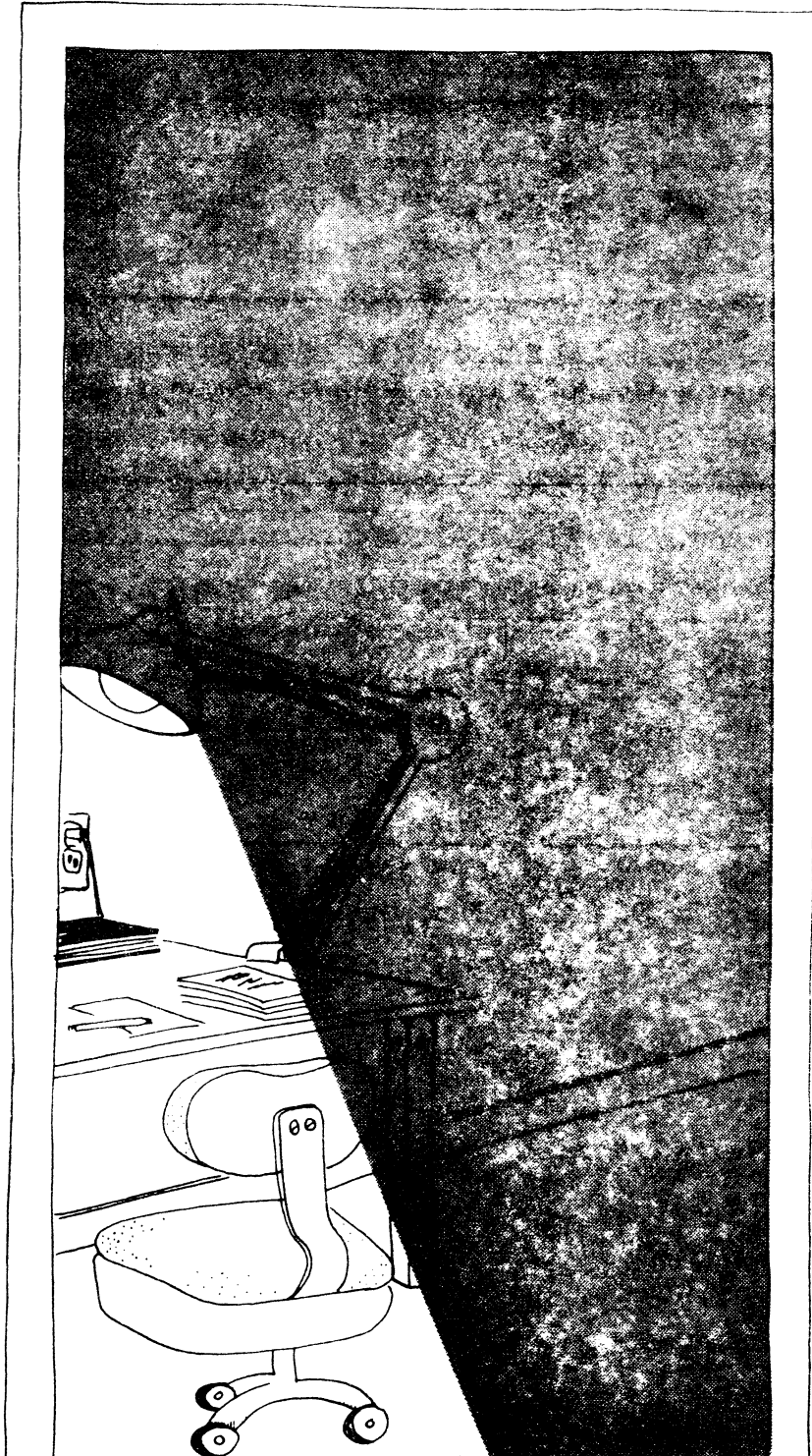
As with heating, leaks are wasteful. Report all cracks and breaks in windows, doors and thresholds.

Saving Energy Used in Lighting -- This is where common sense really pays off!

All lights not needed right where someone is working at the moment should be off. Common sense tells you there are some places light is needed for safety. Usually, however, lighting energy shouldn't be wasted on storerooms, empty conference and supply rooms, unused workbench and desk areas, washrooms, loading docks and exterior building entrances.

Saving on lighting for even a little while is worth while! For instance, if a fluorescent light has been off for one second, you've saved the energy needed to turn it back on! So the rest of the time it's off "is all gravy!" It boils down to this: any time people leave a desk or a room for even a minute or two, the light should be turned off.

Besides lighting, of course, whatever puts a needless load on the electrical system is energy-wasteful. Extra appliances plugged into the system will defeat the purpose of the conservation program. So, keep an eye out for unauthorized heaters, fans, hot plates and so forth.



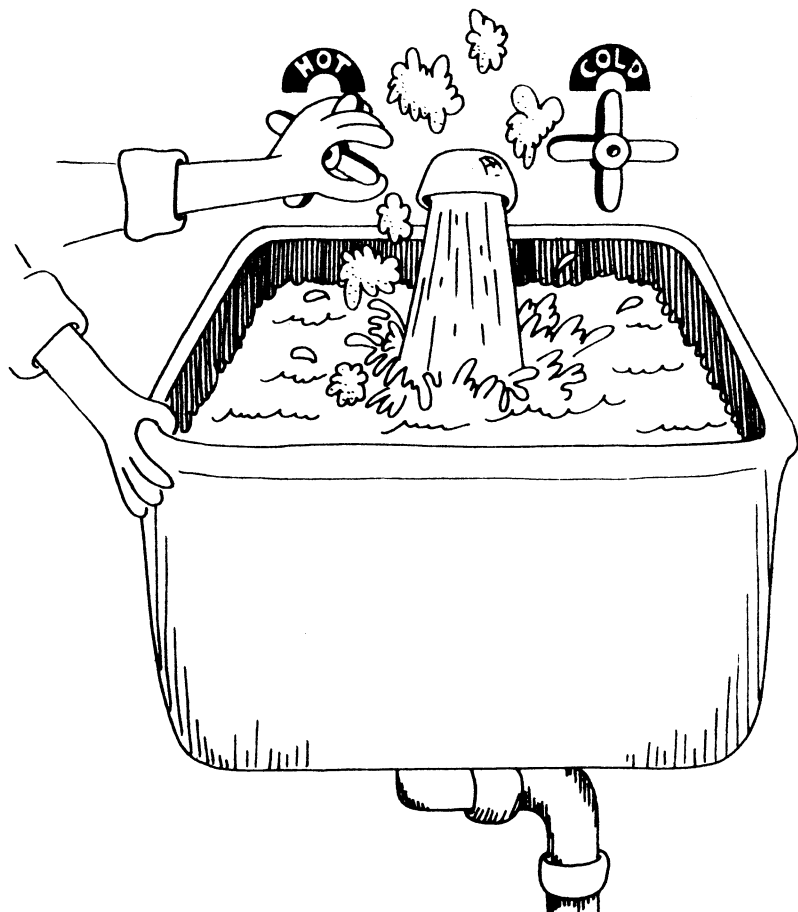
Saving Hot Water -- With every drip of hot water, you can really see money going down the drain! Saving hot water saves the energy needed to heat that water.

Every leak is important to you. A slow drip will waste 15 gallons of hot water a day. That's energy completely wasted! Leaking faucets, pipes, steam lines, hoses and shower heads in kitchens, utility rooms and washrooms should all be reported to the Emergency Service Desk promptly.

Summary -- You are an energy conservation team leader. You do your job at the "grass roots" of the Navy's energy program.

You monitor the energy used by the heating, cooling, lighting and hot water systems in your building. Under your leadership, everyone on your building team will become conservation conscious. Your job is three-fold:

- 1 - Regularly inspect the energy-using equipment in the building.
- 2 - Report equipment needing repair.
- 3 - Share with others your team's ideas.



Finally, never lose sight of the critical role you fulfill. "Every little bit counts!" In no program has this been more true than in the Navy's energy conservation program. You are a key part of that program!

#

Sample Check List

	Number	
	OK	Not OK
1. <u>Heating</u>		
Thermostat settings:		
Work spaces 65, duty hrs.	_____	_____
Work spaces 55, off-duty hrs	_____	_____
Storerooms and non-work spaces 55 or lower	_____	_____
Doors, windows secured...	_____	_____
Items needing repair.....	_____	_____
2. <u>Cooling</u>		
Thermostat settings:		
Work spaces 78, duty hrs.	_____	_____
Cooling secured, off-duty hrs.....	_____	_____
Doors, windows secured.....	_____	_____
Shades closed sunny side bldg.....	_____	_____
Ventilation/exhaust fans secured.....	_____	_____
Unauthorized spaces cooled..	_____	_____
Items needing repair	_____	

3. Lighting/Electrical

Lights off in non-work
areas..... _____

Are only required lights on
in partially occupied
spaces?..... _____

Ceiling or area lights
on, not needed..... _____
Where? _____

Bench/Desk lights on, not
needed..... _____
Where? _____

Other lights on, not
needed..... _____
Where? _____

Unauthorized appliances
in use..... _____
What & Where? _____

4. Water

Leaking faucets, valves,
fittings..... _____
What & Where? _____

Leaking hoses, steam lines,
pipes..... _____
What & Where? _____

5. Other energy-wasteful condition(s) _____

6. Monitor's Actions Taken _____

7. Other Actions Necessary _____

Objectives

To make everyone in this building conscious
of his responsibility in the Navy's energy
conservation program.

To help reduce energy consumption by all
activities in this building without adverse effect
on mission accomplishment.